

NTRPC Macro - Handling of Natural Remote Procedure Calls

In this macro, you can specify keyword parameters which affect the handling of Natural RPC. For dynamic specification of the keyword parameters described below, you can use the profile parameter RPC.

This document covers the following topics:

- NTRPC Syntax
- NTRPC Macro Keyword Parameters that Apply to Client and Server
- NTRPC Macro Keyword Parameters that Apply to the Server Only
- NTRPC Macro Keyword Parameters that Apply to the Client Only

For additional information, see the Natural Remote Procedure Call documentation.

NTRPC Syntax

The NTRPC macro is specified as follows:

```
NTRPC keyword_parameter=value,...
```

keyword parameter - there are three groups of keyword parameters available that apply to

- both Client and Server
(ACIVERS | MAXBUFF | RPCSIZE | SERVER)
- the Server only
(LOGONRQ | NTASKS | SRVNAME | SRVNODE | SRVUSER | TRACE | TRANSP)
- the Client only
(ACIPATT | AUTORPC | COMPR | DFS | RDS | TIMEOUT | TRYALT)

These keyword parameters are described below.

Example:

```
NTRPC RPCSIZE=80,
      SRVNAME=MYSERV,
      SERVER=ON,
      DFS=(SRV2,NODE1,,ACI),
      RDS=((SRVX,NODEX),(SRVY,NODEY))
```

NTRPC Macro Keyword Parameters that Apply to Client and Server

The following keyword parameters are available: ACIVERS | MAXBUFF | RPCSIZE | SERVER

ACIVERS - Define ACI Version for Use with EntireX Broker ACI

ACIVERS=*n* specifies the API version to be used with the EntireX Broker ACI. The broker stub in use must support the ACI version defined here. The setting of ACIVERS enables special features of the EntireX Broker depending on the API version you are using. For details see Setting Up an EntireX Broker Access in the Natural Remote Procedure Call documentation.

Possible settings	1 - 6	Single-digit number. The higher the version, the more features are available.
Default setting	2	API version 2 is used.
Dynamic specification	YES	
Specification within session	NO	

Note when using the Natural RPC Version 5.1 under CICS:

The specification of ACIVERS=6 is strongly recommended if you are using the EntireX Broker stub EXAAPSC. In this case, Natural will use the TERMINATE option for the LOGOFF from the EntireX Broker.

MAXBUFF - Size of Buffers

MAXBUFF=*nn* can be specified on both the client and the server side.

On the server side it determines the size of the buffer provided by the server to receive the client request including data and to send back the result.

On the client side, it determines the size of the buffer provided for the automatic execution of Natural RPC calls. This buffer is used to build the client request including data and to receive the result. For further information, see Stubs and Automatic RPC Execution in the Natural Remote Procedure Call documentation.

Possible settings	0-16380, but smaller than or equal to RPCSIZE-4	Maximum buffer size in KB. Note that the transport layer you are using may have specific restrictions. Note: For compatibility reasons with earlier Natural versions the value 32 is truncated from 32K to 32000 bytes. This allows you to specify MAXBUFF=32 together with ACIVERS=1.
Default setting	0	No buffer is allocated.
Dynamic specification	YES	
Specification within session	NO	

Note:

If you are using EntireX Broker, the value of MAXBUFF must not be greater than the EntireX Broker attribute MAX-MSG. Additionally, if EntireX Broker uses Entire Net-work, MAXBUFF is restricted by the startup parameter IUBL and must not exceed 32 KB. However, a maximum of 30 KB is recommended.

RPCSIZE - Size of Buffer Used by Natural RPC

RPCSIZE=*nnnnn* determines the size of the buffer used by Natural RPC.

Possible settings	0 - 16384	Buffer size <i>nnnnn</i> in KB.
Default setting	0	Natural RPC cannot be used.
Dynamic specification	YES	
Specification within session	NO	

Support of Parameter Name SIZE

The earlier parameter name SIZE is still supported for compatibility reasons. It will be dropped in the next version.

SERVER - Start Natural Session as an RPC Server Session

SERVER=ON/OFF specifies whether or not the Natural session will be started as an RPC server session.

Possible settings	ON	The Natural session will be started as a RPC server session.
	OFF	The Natural session will not be started as a RPC server session.
Default setting	OFF	
Dynamic specification	YES	
Specification within session	NO	

NTRPC Macro Keyword Parameters that Apply to the Server Only

The following keyword parameters are available: LOGONRQ | NTASKS | SRVNAME | SRVNODE | SRVUSER | TRACE | TRANSP

LOGONRQ - Logon for RPC Server Request Required

LOGONRQ determines whether or not logon data are required for an RPC server request.

Possible settings	ON	A logon is required; that is, the server only accepts requests from clients which include logon data in the RPC server request. For conversational requests, the logon data is only necessary when the conversation is opened.
	OFF	A logon is not required. Logon data is nevertheless processed.
Default setting	ON	
Dynamic specification	YES	
Specification within session	NO	

For Natural clients the logon data can either be requested:

- by setting the LOGON option of the SYSRPC Service Directory Maintenance
- using the logon indicator of the profile parameter DFS.

You are strongly recommended to set LOGONRQ=ON if the Natural RPC server runs under Natural Security. For further information, see Using Natural RPC with Natural Security in the Natural Remote Procedure Call documentation.

For additional information on Natural RPC, see the Natural Remote Procedure Call documentation.

NTASKS - Number of Server Tasks to be Started

NTASKS=*nn* specifies the number *nn* of server tasks to be started.

If the server has to handle a large number of client requests, you can use this option to improve the throughput by starting multiple (identically named) copies of the same server process.

Possible values:	1 - 99	Number of copies of one server process.
Default value:	1	
Dynamic specification	YES	
Specification within session	NO	

SRVNAME - Name of RPC Server

It specifies the name of the RPC server, with which it registers on the node specified with the profile parameter SRVNODE.

Possible settings	1 - 8 characters 1 - 192 characters (as of Natural RPC Version 5.1.1 or above)	Valid server name.
Default setting	none	
Dynamic specification	YES	
Specification within session	NO	

Note when using the Natural RPC Version 5.1:

You may either specify a physical server name of up to 32 characters or a logical service name of up to 192 characters. In case of a logical service name, the SRVNODE must be set to * (intentionally left empty).

Example:

```
SRVNAME=ŸPRODUCTION_SERVERŸ
```

```
SRVNAME=ŸMY_LOGICAL_SERVICE,MY_SETŸ
```

For more details about Location Transparency and logical service names, refer to the EntireX documentation.

SRVNODE - Name of Node

SRVNODE=*node* specifies the name of the node upon which an RPC server registers.

Possible settings	1 - 8 characters 1 - 192 characters (as of Natural RPC Version 5.1.1 or above)	Node name.
Default setting	none	
Dynamic specification	YES	
Specification within session	NO	

If you use a symbolic name as node name for a TCP/IP connection, this symbolic name must be defined in the hosts and services file of your TCP/IP configuration.

Note when using the Natural RPC Version 5.1:

You may either specify a physical node name of up to 32 characters, a logical node name of up to 192 characters or * (intentionally left empty) to indicate that SRVNODE contains a logical service name.

Example:

```
SRVNODE=ETB001
SRVNODE=PCBROKER
SRVNODE=ÿ157.189.160.95:1958:TCPÿ
SRVNODE=ÿMY_LOGICAL_NODE,MY_SETÿSRVNODE=ÿ*ÿ
```

For more details about Location Transparency and logical node names, refer to the EntireX documentation.

SRVUSER - Server User ID for RPC Server Registry

SRVUSER=*user-id* specifies the user ID needed to register an RPC server on the node specified with the profile parameter SVRNODE. If this specification is omitted, the timestamp will be used.

Possible settings	1 - 16 characters	User ID. If SRVUSER is set to *NSC and Natural Security is installed, the Natural server uses the current Natural user ID (*USER) and the password defined for this user ID in Natural Security to logon to the node.
Default setting	timestamp	
Dynamic specification	YES	
Specification within session	NO	

TRACE - Activate RPC Trace Facility

TRACE=*n* activates the RPC trace facility and determines the trace level *n* to be used. For further information, see Using the Server Trace Facility p.p. in the Natural Remote Procedure Call documentation.

Possible settings	0	Nothing is traced.
	1	Only messages (inclusive Natural errors) are traced.
	2	All messages and data from/to client are traced.
Default setting	0	
Dynamic specification	YES	
Specification within session	NO	

The values 3-9 displayed in the selection box are for future use. If one of these values is chosen, then TRACE=2 is selected.

TRANSP - Server Transport Protocol

It determines which server transport protocol is used. If ACI is used, you can additionally specify the transport method.

Possible settings	ACI	ACI is used. The transport method is defined by the EntireX Broker.
	CSCI	CSCI is used. (OpenVMS only).
	ACI,TCP	ACI is used with TCP/IP.
	ACI,NET	ACI is used with Entire Net-work, i.e. using the Adabas protocol.
	ACI,TCP-NET	Trying to use ACI with TCP. If not available, ACI is used with NET.
	ACI,NET-TCP	Trying to use ACI with NET. If not available, ACI is used with TCP.
Default setting	ACI	
Dynamic specification	YES	
Specification within session	NO	

Note when using the Natural RPC Version 5.1:

The use of TRANSP is no longer required as you may now specify the full node name with SRVNODE. It is still supported for compatibility reasons.

NTRPC Macro Keyword Parameters that Apply to the Client Only

The following keyword parameters are available: ACIPATT | AUTORPC | COMPR | DFS | RDS | TIMEOUT | TRYALT

ACIPATT - Define Node Pattern for ACI Protocol

ACIPATT=*node-pattern* determines which node names will be used for the ACI transport protocol together with Natural Remote Procedure Call. You can specify a pattern to match node names used for the ACI transport protocol (that is EntireX Broker nodes).

It applies only to nodes which were defined in the server maintenance of the SYSRPC utility (because there the transport protocol cannot be specified).

Possible settings	1-8 characters, including *	Pattern for node name matching. All node names matching this pattern are assumed to be ACI nodes.
Default setting	*	All node names match the pattern. The ACI transport protocol is used for all of them.
Dynamic specification	YES	
Specification within session	YES	At runtime, this value can be overwritten by the parameter maintenance of the SYSRPC utility.

Node names beginning with the letter(s) specified and/or up to the first "*" are matched. For example, if you specify N*, all node names beginning with N are recognized as ACI nodes.

AUTORPC - Automatic Natural RPC Execution

This parameter determines whether or not Natural RPC will automatically try to execute a subprogram remotely (on the server side) which was not found locally (on the client side). For details see Stubs and Automatic RPC in the Natural Remote Procedure Call documentation.

Possible settings	ON	Natural RPC will automatically try to execute it remotely.
	OFF	Natural RPC will not automatically try to execute it remotely.
		If AUTORPC=OFF, you can execute CALLNATs remotely using stubs.
Default setting	OFF	
Dynamic specification	YES	
Specification within session	NO	

End of AUTO Parameter Name Support

The earlier parameter name AUTO is still supported for compatibility reasons. It will be dropped in the next version.

COMPR - Set RPC Buffer Compression

This parameter can be used to set the RPC buffer compression. It is effective only, if the automatic Natural RPC execution is used (AUTORPC=ON) and the CALLNAT is executed without a stub. If a stub is used, the compression has already been set during stub generation. For details see Using Compression in the Natural Remote Procedure Call documentation.

Possible settings	0	No compression will be performed.
	1	The send buffer contains modifiable fields and output fields and the format buffer. The reply buffer contains modifiable fields and input fields.
	2	Same as COMPR=1, additionally the reply buffer also contains the format buffer.
Default setting	1	
Dynamic specification	YES	
Specification within session	YES	At runtime, this value can be overwritten by the parameter maintenance of the SYSRPC utility.

DFS - RPC Default Server Address

This parameter can be used to define an RPC default server address. It determines the server name, the server node, the logon indicator and the transport protocol. The default server address will be used only if no appropriate server is found in the service directory. For further information, see Specifying RPC Server Addresses in the Natural Remote Procedure Call documentation.

To define a default server address you specify up to 4 subparameters.

Possible settings	4 subparameters	The <i>server name</i> (1 - 8 characters). As of Natural RPC Version 5.1.1 or above, the length of the value specified as <i>server name</i> may be 1 - 192 characters. There is no default, the value must be specified.
		The <i>server node</i> (1 - 8 characters). As of Natural RPC Version 5.1.1 or above, the length of the value specified as <i>server node</i> may be 1 - 192 characters. There is no default, the value must be specified.
		A <i>logon indicator</i> . If nothing is specified, blank is the default. L The client initiates a Natural logon to the server with the library name of the current library on the client. blank No server logon will be executed. Note for Windows platforms: instead of "L", check the selection box.
		The <i>transport protocol</i> to be used (ACI or CSCI). ACI is the default. CSCI is supported only for OpenVMS.
Default setting	none	Subparameter defaults, see above.
Dynamic specification	YES	See below.
Specification within session	YES	At runtime, this value can be overwritten by a Natural user exit (USR2007N).

Syntax for dynamic specification:

DFS=(*server-name,server-node name,logon-indicator,transport-protocol-name*)

Note when using the Natural RPC Version 5.1:

For the possible values for *server-name* and *server-node*, refer to SRVNAME and SRVNODE above.

RDS - Define Remote Directory Servers

This parameter allows you to define up to 10 remote directory servers. For each remote directory server, you specify up to 5 subparameters.

Possible settings	5 subparameters	The <i>server name</i> (1 - 8 characters). There is no default, the value must be specified.
		The <i>server node</i> (1 - 8 characters). There is no default, the value must be specified.
		The name of the <i>subprogram</i> , titled CALLNAT, (1 - 8 characters) to be used as interface (default is RDSSCDIR).
		A <i>logon indicator</i> . If nothing is specified, blank is the default. L The client initiates a Natural logon to the server with the library name of the current library on the client. blank No server logon will be executed. Note for Windows platforms: instead of "L", check the selection box.
		The <i>transport protocol</i> to be used (ACI or CSCI). ACI is the default. CSCI is supported only for OpenVMS.
Default setting	none	Subparameter defaults, see above.
Dynamic specification	YES	See below.
Specification within session	NO	

For dynamic specification the syntax is as follows.

Using 1 server:

RDS=(*server-name,server-node name,subprogram,logon-indicator,transport-protocol-name*)

Using 2-10 servers:

RDS=((*server-name,server-node name,subprogram,logon-indicator,transport-protocol-name*)(*server-name,server-node name,subprogram,logon-indicator,transport-protocol-name*)...(*server-name,server-node name,subprogram,logon-indicator,transport-protocol-name*))

For information on remote directories, see Natural Remote Procedure Call documentation.

TIMEOUT - Wait Time for RPC Server Response

It specifies the number of seconds the client is to wait for an RPC server response. If this time is exceeded, the remote procedure call will be terminated with a corresponding error message.

Possible settings	0 - 32767	Seconds.
Default setting	55	
Dynamic specification	YES	
Specification within session	YES	At runtime, this value can be overwritten by the parameter maintenance of the SYSRPC utility.

TRYALT - Try Alternative Server

It determines whether an RPC client should try to execute an RPC request on an alternative server (ON) or not (OFF). For further information, see Specifying RPC Server Addresses in the Natural Remote Procedure Call documentation.

Possible settings	ON	If a request could not be executed on the node you specified, the RPC client tries to find an alternative server address to send that request to.
	OFF	No such attempt will be made.
Default setting	OFF	
Dynamic specification	YES	
Specification within session	YES	At runtime, this value can be overwritten by the parameter maintenance of the SYSRPC utility.